(No Model.) 2 Sheets—Sheet 1.

E. P. HOLDEN.

CRIMPING MACHINE.

No. 555,244. Patented Feb. 25, 1896.

Fig. 1

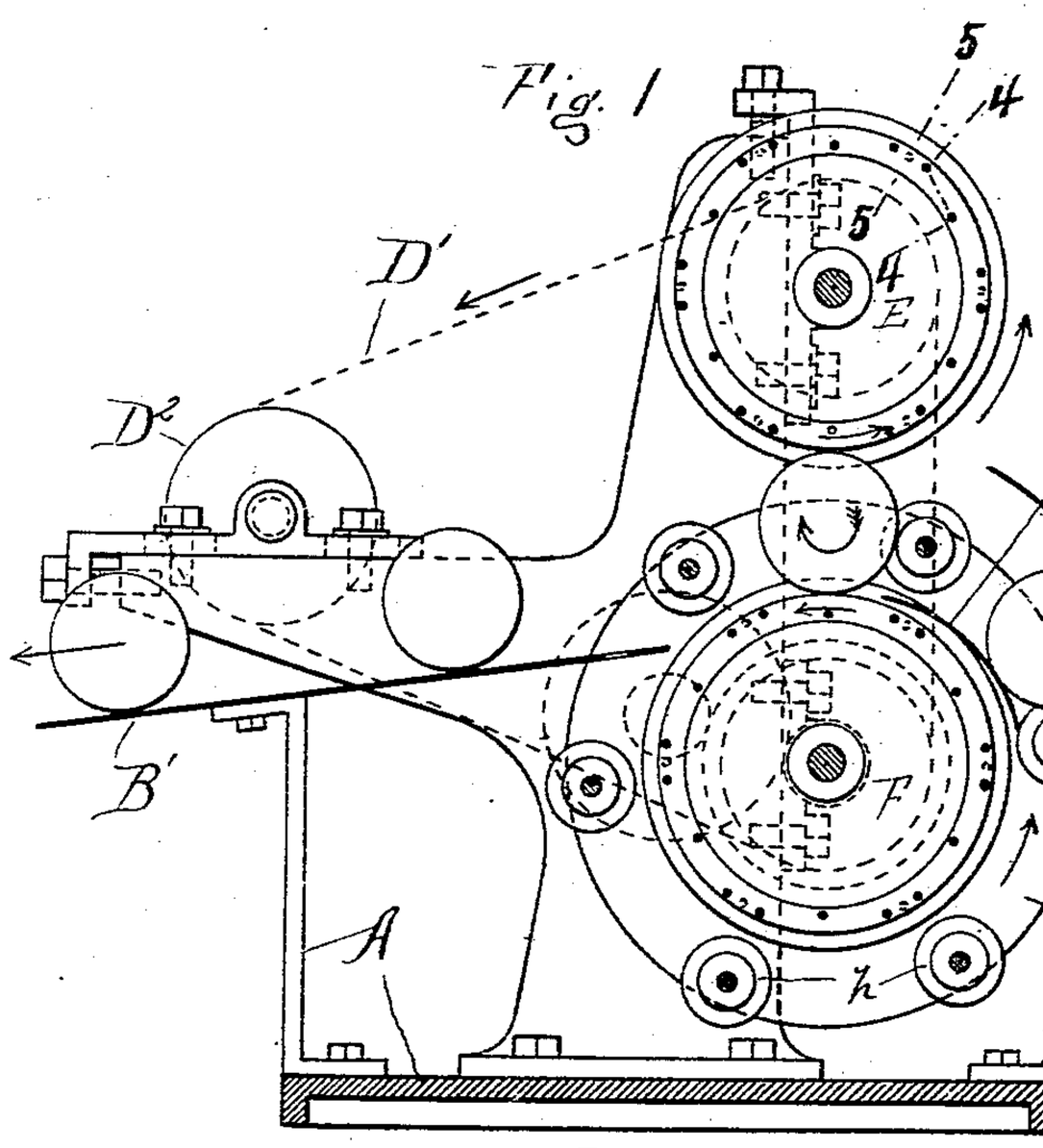


Fig. 4.

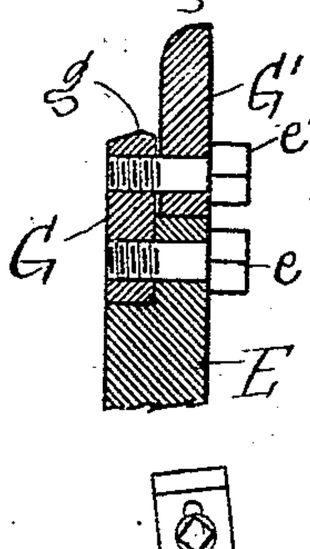


Fig. 5.

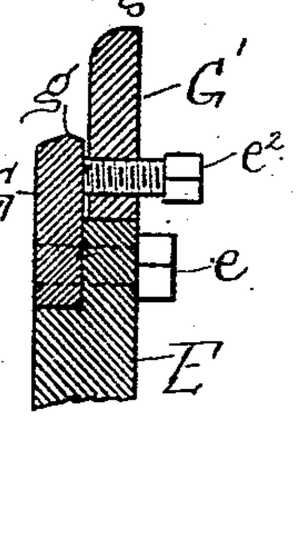


Fig. 3.

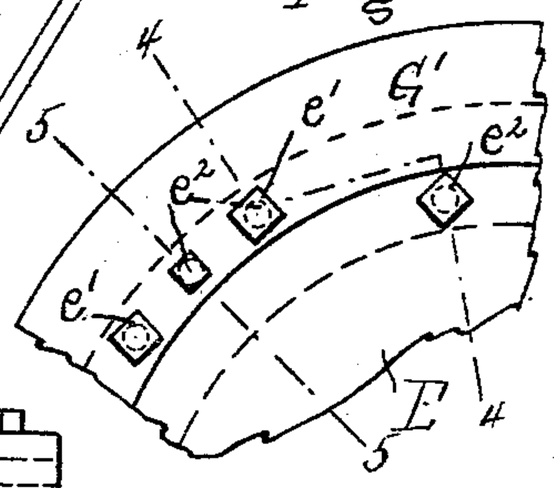


Fig 2.

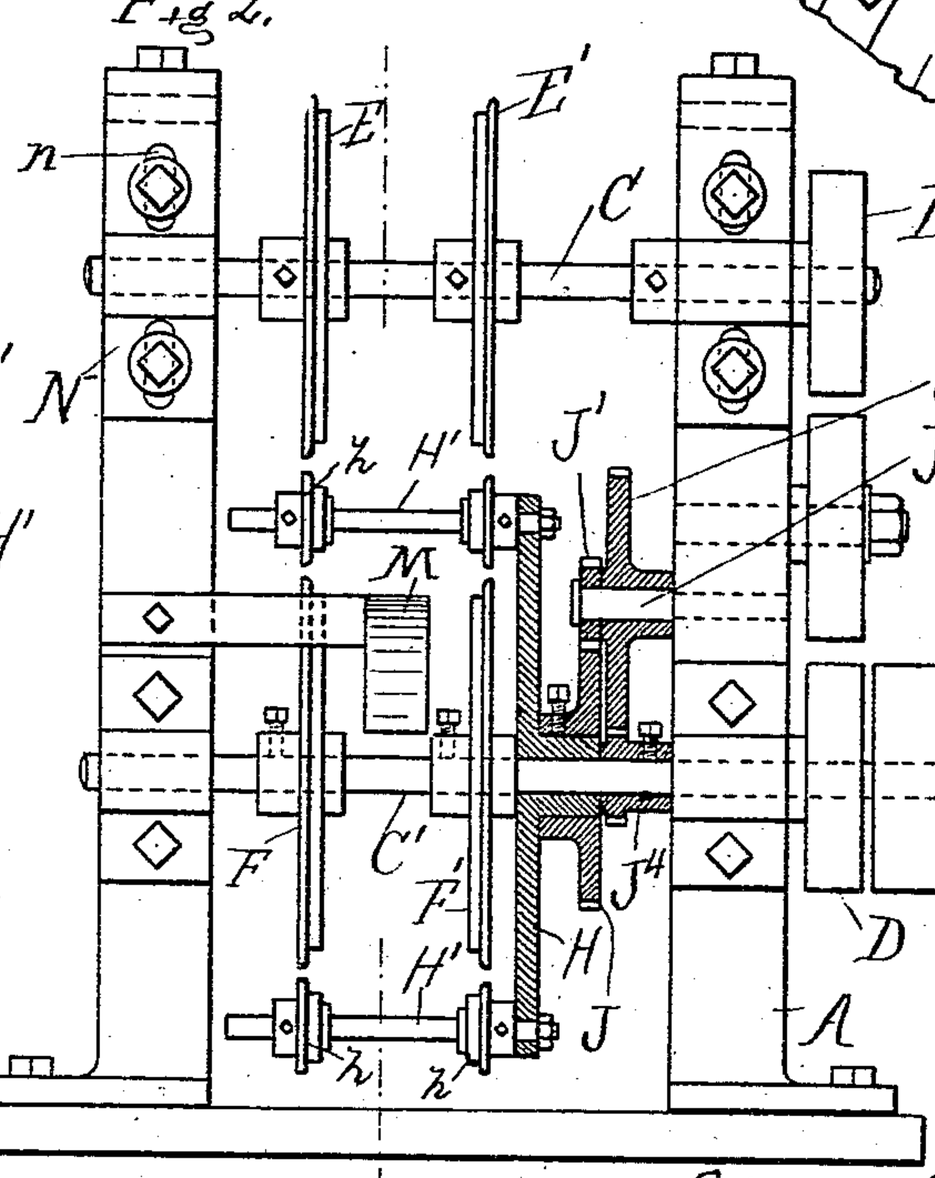
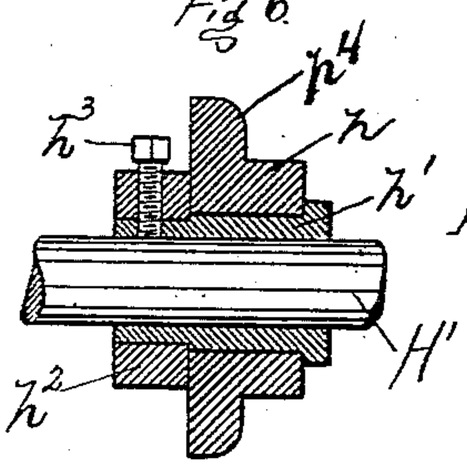


Fig 6.



Witnesses

Clifford L. White

Florence King

Inventor

Edward P. Holden

By his Attorney

Walter H. Chamberlin

(No Model.) 2 Sheets—Sheet 2.

E. P. HOLDEN.

CRIMPING MACHINE.

No. 555,244. Patented Feb. 25, 1896.

Fig. 7.

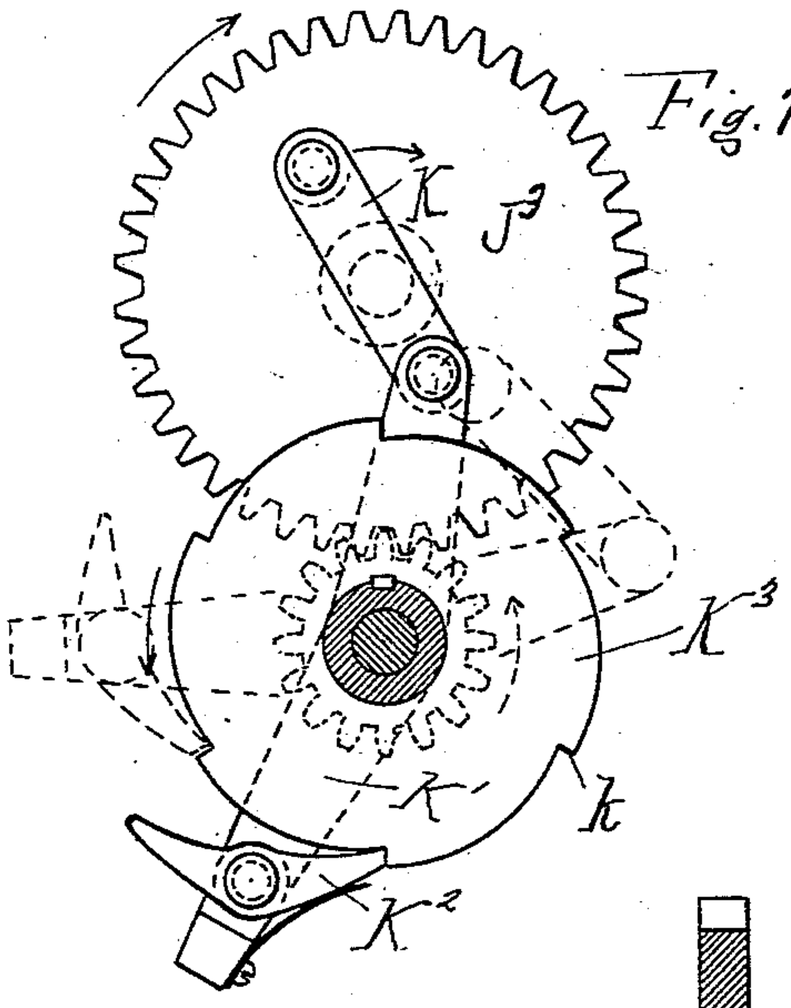
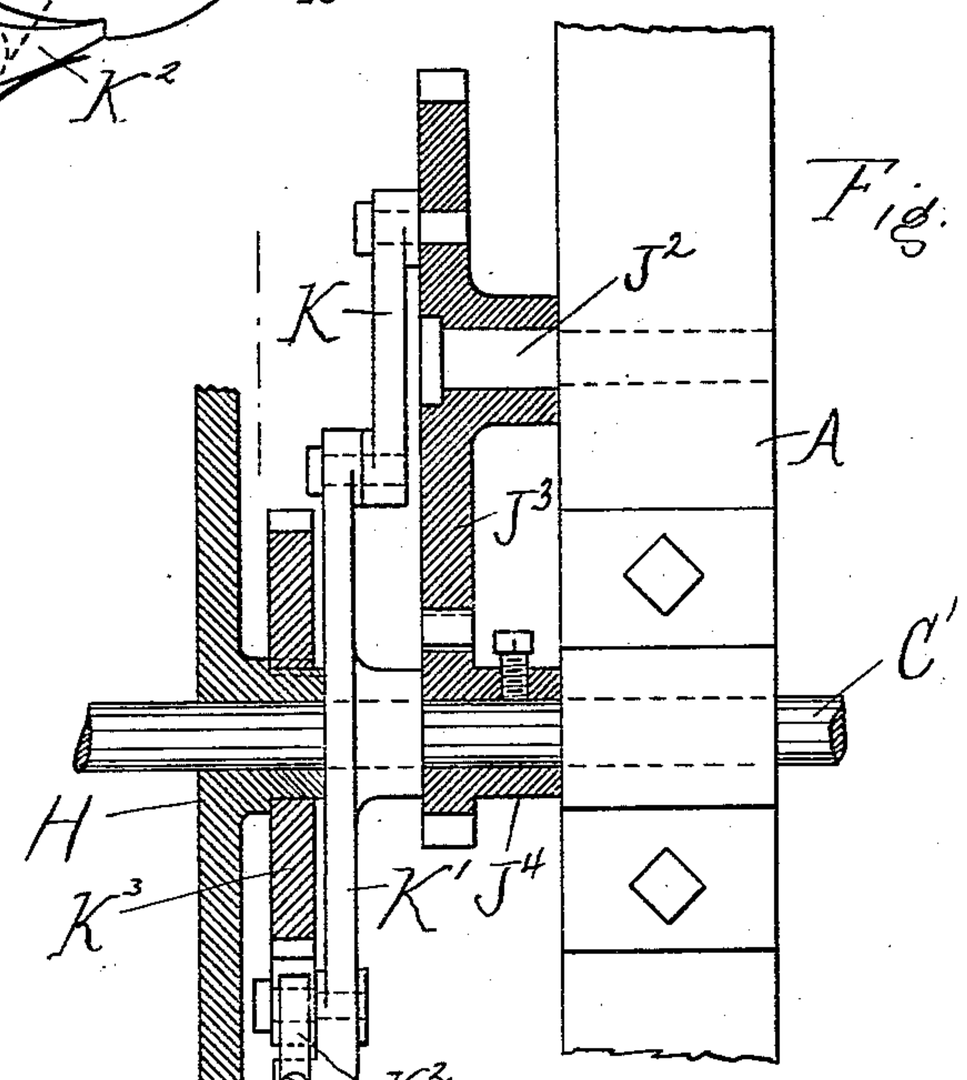


Fig. 8.



WITNESSES:

Clifford D. White,

Florence King.

INVENTOR

Edward P. Holden

BY

Walter H. Chamberlin

ATTORNEY.

UNITED STATES PATENT OFFICE.

EDWARD P. HOLDEN, OF CHICAGO, ILLINOIS.

CRIMPING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 555,244, dated February 25, 1896.

Application filed July 2, 1894. Renewed June 28, 1895. Serial No. 554,380. (No model.)

To all whom it may concern:

Be it known that I, EDWARD P. HOLDEN, a citizen of the United States, residing at Chicago, county of Cook, State of Illinois, have invented a certain new and useful Improvement in Crimping-Machines; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention has for its object the production of a can-crimping machine in which the can is revolved between two moving surfaces.

The invention consists in a combination of devices and appliances hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation of my machine. Fig. 2 is an end elevation with parts in section. Fig. 3 is a side elevation of a portion. Fig. 4 is a sectional view on the line 4 4 of Figs. 1 and 3. Fig. 5 is a sectional view on the line 5 5 of Figs. 1 and 3. Fig. 6 is a sectional view through one of the pushing-rollers. Fig. 7 is a detail in elevation of the ratchet mechanism. Fig. 8 is a section of the same.

In carrying out the invention A represents the frame of the machine.

B is the chute down which the cans roll as they are fed to the machine, and B′ the discharge-chute.

Journaled in the frame are two shafts or axles C C′, driven in any suitable manner. I have shown these shafts driven by means of band-wheels D and the belt D′ passing around the band-wheels with a suitable tightener D^2; but it is obvious that sprocket chains or gears might be employed to drive these shafts C C′. On the shaft C are two wheels or disks E E′, and on the shaft C′ are two similar wheels or disks F F′. These wheels or disks are preferably made of cast-iron, although not necessarily so. On the periphery of each disk and preferably although not necessarily made of a separate piece is the metal (preferably steel) rim or flange or lining G, (see Figs. 4 and 5,) having its periphery brought to more or less of an edge *g*. It is this rim or mechanism G which bears directly upon the can and forms the indentation or crimp in the flange of the can end.

G′ is another flange on the periphery of each wheel E E′ F F′ to form an abutting flange to hold the end of the can in place.

Mounted upon the shaft C′ is a wheel or disk H, provided at intervals with outwardly-extending arms H′. These arms form the shafts or supports for rollers or disks *h*, (shown in detail in Fig. 6,) the rollers being loosely mounted upon a spool or sleeve *h′*, which is held to the shaft H′ by the collar h^2 and set-screw h^3. This roller *h* is provided with a flange h^4, against which the end of the can abuts. This frame or disk H is revolved by means of a gear J on the hub of the disk H, which meshes with a pinion J′, the latter being on the shaft J^2. This shaft is driven by the gear J^3 meshing with the pinion J^4 on the shaft C′.

Through the intermediate gears just described the disk H may be given any desired speed.

The operation is as follows: A can rolls down the chute B (see Fig. 1) and strikes the guard-plate M. Here it rests until it is picked up by a pair of rollers, the latter elevating it until it is caught between the disks E E′ and F′ F. These disks, as above explained, are revolving in opposite directions, one set slightly more rapidly than the other. This revolves the can between the two sets of disks, and the strip G bearing upon the end of the can crimps it. The continued revolution of the disk H carries the can away and it drops down onto the chute B′ and rolls away from the machine. In crimping-machines it is desirable to have the machines so adjustable that the crimp may be made upon the can end at different points for different cans—that is to say, the flange on the can end may be longer or shorter in different styles of cans, and it may be desired to crimp the flange at one point in some cans and at another in other cans. In an application at present pending in the Patent Office I have described a machine in which the crimping lining or rim or flange, corresponding with the lining G, is adjustable. In the present machine, instead of making

this crimping-lining adjustable, I make the disk adjustable on its shaft, and the holding-flange G′ adjustable.

It will be observed by reference to Figs. 4 and 5 that the lining G is held to the disk by cap-screws *e*, and the flange G′ held to the lining G by the cap-screws *e′*. It will also be observed that the flange G′ is provided with set-screws e^2. Now it is obvious that by loosening the cap-screws *e′* the flange G′ can be adjusted by means of the set-screws e^2.

In some cases, instead of giving the disk H a steady rotary movement, it might be desired to give it an intermittent motion—that is, to bring the can up to the point between the two sets of disks E E′ and F F′, and then let it remain there until it has had ample opportunity to revolve between said sets of disks. I have provided such mechanism, as shown by Figs. 7 and 8. In Fig. 8 it will be seen that there is still the pinion J^4 and the gear J^3 on the shaft J^2. To the face of this disk J^3 is pivoted eccentrically a link K, and this link is pivoted to a reciprocating lever K′ provided on its end with a pawl K^2, which engages notches *k* on the periphery of the disk K^3. This latter disk K^3 is on the hub of the disk H. Now, as will be seen, a revolution of the disk J^3 gives the lever K′ an oscillating motion, as shown by the dotted lines, Fig. 7, and the pawl engaging the notches *k* gives the disk K^3 an intermittent motion, the disk H also partaking of the same motion.

In order that the machine may be adapted for different diameters of cans I make one of the shafts (preferably the shaft C) vertically adjustable by slotting the bolt-holes *n* of the bearings.

I would have it understood that my mechanism might be modified to a greater or less extent without departing from the spirit of the invention, which consists essentially in the provision of two crimping-surfaces moving in opposite directions, between which the can is rolled.

What I claim is—

1. In a crimping-machine the combination of two parts having proximate surfaces positively moving in opposite directions between which the can is rolled, at least one of said surfaces provided with a crimping-flange, and at least one surface positively acting to revolve the can, substantially as described.

2. In a crimping-machine the combination of two rotary disks between which the can to be crimped is rolled, both said disks bearing upon the flange to be crimped, and at least one of them positively acting to revolve the can, substantially as described.

3. In a crimping-machine the combination with two rotary disks between which the can is rolled, both disks bearing on the flange to be crimped and at least one of them positively acting to revolve the can, of mechanism for carrying the can to a point between the two disks, substantially as described.

4. In a crimping-machine the combination of two disks arranged to revolve in a vertical plane and between which the can to be crimped is rolled, both disks bearing on the flange to be crimped, and at least one of them positively acting to revolve the can, substantially as described.

5. In a crimping-machine the combination of two sets of rotary disks between which the can is rolled, both sets bearing on the flanges to be crimped, and at least one of the sets positively acting to revolve the can, substantially as described.

6. In a crimping-machine the combination of two sets of disks in vertical planes between which the can is rolled, at least one set acting to revolve the can said sets of disks respectively bearing simultaneously on the flanges of the opposite ends to be crimped, substantially as described.

7. In a crimping-machine the combination of two sets of disks in vertical planes between which the can is rolled, at least one set acting to revolve the can said sets of disks respectively bearing simultaneously on the flanges of the opposite ends to be crimped, and mechanism for carrying the can to a point between the two sets of disks, substantially as described.

8. In a crimping-machine the combination of two sets of rotary disks, both sets of disks bearing on the flanges to be crimped, and at least one set positively acting to revolve the can, and mechanism having an intermittent motion for carrying the can to a point between the disks, substantially as described.

9. In a crimping-machine the combination of two sets of rotary disks revolving in vertical planes both sets bearing on the flanges to be crimped, and at least one set positively acting to revolve the can, and another disk revolving also in a vertical plane, the latter carrying means for elevating the cans to a point between the two sets of disks, substantially as described.

10. In a crimping-machine the combination of two sets of rotary disks between which the can is rolled, revolving in a vertical plane, and another disk also revolving in a vertical plane, the latter carrying arms provided with rollers adapted to engage the can and elevate it to a point between the two sets of disks, substantially as described.

11. In a crimping-machine the combination of two rotary disks between which the can is rolled, at least one of the disks provided with a separate crimping lining or flange adapted to bear upon and crimp the can, substantially as described.

12. In a crimping-machine the combination of two rotary disks between which the can is rolled, at least one of the disks provided with a steadying-flange to hold the can in place, and at least one disk positively acting to revolve the can, substantially as described.

13. In a crimping-machine the combination

of two disks between which the can is rolled, at least one of the disks provided with a crimping-flange and with a steadying-flange to hold the end of the can in place, and at least one disk positively acting to revolve the can, substantially as described.

14. In a crimping-machine the combination of two disks between which the can is rolled, at least one of the disks provided with a steadying-flange made laterally adjustable thereon, substantially as described.

15. In a crimping-machine the combination of two sets of rotary disks between which the can is rolled, at least one disk for each end of the can provided with a crimping flange or lining, and at least one set positively acting to revolve the can, substantially as described.

16. In a crimping-machine the combination of two sets of rotary disks between which the can is rolled, and at least one disk for each end of the can provided with a steadying-flange laterally adjustable thereon, substantially as described.

17. In a crimping-machine the combination of two rotary disks revolving in vertical planes, a chute for feeding the cans to the machine a guard-plate against which the lower can strikes, and another disk revolving in a vertical plane carrying arms adapted to engage the cans successively and elevate them to a point between the disks, substantially as described.

18. In a crimping-machine the combination of two rotary disks between which the can is rolled, at least one of said disks adjustable toward or from the other, and at least one disk positively acting to revolve the can, substantially as described.

19. In a crimping-machine the combination of two sets of rotary disks, one of said sets adjustable toward or from the other set, and at least one set positively acting to revolve the can, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

EDWARD P. HOLDEN.

Witnesses:

W. H. CHAMBERLIN,

C. N. WHITE.